

CLAIM AMENDMENTS

In the claims:

Please cancel claims 11-14, 19-20, and 22-30 without prejudice or disclaimer.

Please amend claims 1, 7, 15, and 21 as follows.

1. (Currently Amended) A system, comprising:
 - a set of transceivers to couple a set of optical channels; and
 - an integrated optical circuit coupled to receive the set of optical channels from the set of transceivers, the integrated optical circuit having:
 - a set of optical amplifiers formed in the integrated optical circuit; ~~and~~
 - ~~a set of~~ an arrayed waveguide gratings (AWG) formed in the integrated optical circuit and coupled to the set of optical amplifiers; and
 - a set of waveguide elements coupled to outputs of the set of optical amplifiers,

the AWG having a star coupler coupled to the waveguide elements.
2. (Original) The system of claim 1, further comprising a set of optical fibers to couple the set of transceivers to the integrated optical circuit.
3. (Original) The system of claim 1, wherein the set of optical amplifiers comprises a set of waveguide elements to combine pump light and optical signal light.
4. (Original) The system of claim 3, wherein the set of optical amplifiers includes a set of gain portions coupled to the set of waveguide elements.
5. (Original) The system of claim 4, wherein the set of optical signals includes a multiple channel optical signal and the AWG is coupled to demultiplex the multiple channel optical signal into a set of single channel optical signals.

6. (Original) The system of claim 4, wherein the set of optical signals includes a set of single channel optical signals and the AWG is coupled to multiplex the set of single channel optical signals into a multiple channel optical signal.

7. (Currently Amended) An apparatus, comprising:

an integrated optical circuit having:

a set of optical amplifiers formed in the integrated optical circuit; ~~and~~

an arrayed waveguide grating (AWG) formed in the integrated optical circuit and coupled to the set of optical amplifiers, and

a set of waveguide elements coupled to outputs of the set of optical amplifiers,

the AWG having a star coupler coupled to the waveguide elements;

8. (Original) The apparatus of claim 7, wherein the AWG is coupled to a set of optical amplifiers inputs via a set of input waveguide elements.

9. (Original) The apparatus of claim 8, wherein the AWG is coupled to a set of optical amplifier outputs via a set of output waveguide elements.

10. (Original) The apparatus of claim 7, wherein the set of optical amplifiers includes a set of gain portions coupled to the set of waveguide elements.

Claims 11-14. (Canceled).

15. (Currently Amended) The apparatus of claim 7 ~~14~~, wherein each optical amplifier in the set of optical ~~amplifier~~ amplifiers has a predetermined length to compensate for non-uniform gain spectrum of the AWG.

16. (Original) The apparatus of claim 15, wherein the set of optical amplifiers is coupled to combine pump light and optical signal light.

17. (Original) The apparatus of claim 16, further comprising a pump interface to couple pump light to the set of optical amplifiers.

18. (Original) The apparatus of claim 16, further comprising an optical signal interface to couple optical signal light to the AWG.

Claims 19-20. (Canceled)

21. (Currently Amended) The apparatus of claim 7 ~~19~~, wherein the AWG includes a waveguide array, wherein a shape and width of each waveguide in the waveguide array is varied to produce a varied light distribution in the ~~a-an~~ AWG ~~output~~ waveguide array.

Claims 22-30. (Canceled).